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THE STATE OF WYOMING

Jim Geringer, *Governor*
Sleeter C. Dover, Esq., *Director*

Department of Transportation

5300 BISHOP BOULEVARD CHEYENNE, WYOMING 82009-3340

December 24, 2001

FHWA Advanced Notice of Proposed Rulemaking

U.S. Department of Transportation
Dockets Management Facility, Room PL-401
400 Seventh Street, SW
Washington, DC 20590

Dear Sirs:

Please find enclosed the Wyoming Department of Transportation's comments on the following Federal Highway Administration's (FHWA) Advanced Notice of Proposed Rulemaking:

FHWA Docket No. FHWA-2001-9182 - 14 Highway Bridge Replacement and Rehabilitation Program

FHWA Docket No. FHWA-2001-8954 - 25 National Bridge Inspection Standards

We appreciate the opportunity to comment.

Sincerely,

Gregg C. Fredrick, P.E.
State Bridge Engineer

GCF/jlk
Enclosure

cc: B. Patrick Collins, P.E., Engineering and Planning Engineer, WYDOT, Cheyenne
Lee D. Potter, P.E., Pavement and Structures Engineer, FHWA, Cheyenne

THE STATE OF WYOMING

Jim Geringer, *Governor*

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Department of Transportation

5300 BISHOP BOULEVARD CHEYENNE, WYOMING 82009-3340

December 21, 2001

MEMORANDUM

TO: Federal Highway Administration

FROM: Wyoming Department of Transportation

SUBJECT: FHWA Docket Number FHWA-2001-8954

The Wyoming Department of Transportation offers the following responses and comments with respect to the advance notice of proposed rule making for the National Bridge Inspection Standards, FHWA Docket Number FHWA-2001-8954.

Should the FHWA develop its own definition of a bridge for the purpose of inspection and reporting?

No. The FHWA should not develop its own definition of a bridge for inspection and reporting. The current definition of a bridge is sufficient, and a separate definition for inspection and reporting would be confusing.

Should the FHWA definition change the way the bridge length is determined or what the minimum bridge length should be for reporting purposes?

No. The way a bridge length is determined should remain as currently defined. Structures less than 20 feet in length typically pose very little concern for safety. This is particularly true of smaller box and pipe culvert installations.

What impact will the possible inclusion of more bridges be (1) on public authorities complying with this as an NBIS requirement, (2) or on the FHWA which maintains the inventory, (93) or on the HBRRP Funds?

The effort, on the part of agencies overseeing the bridge inspection programs to identify and inventory these smaller structures, will require exhaustive man hours and additional resources. This is particularly true in rural areas and counties where records of such structures are sketchy or nonexistent. This would also result in a substantial increase to the number of bridges inspected and a large increase in the database requirements to

maintain the inspection records. If the structures where to qualify for HBRRP funding, replacement funds could benefit the local transportation system, likely at the expense of the current inventory of deficient bridges needing rehabilitation or replacement. The benefit of changing the definition of a bridge to include smaller structures is not justified. Public authorities can elect to inspect these structures if they feel the need is warranted.

What impact will changing the underwater inspection intervals have on public authorities complying with this as an NBIS requirement?

It is logical that each installation will behave differently based on the substructure type, foundation material and flow characteristics. Because scour is the leading cause of bridge failure and a driving force in the NBIS, the guidelines for performing underwater inspections should remain essentially the same as they currently exist. Portions of structures continuously underwater should be inspected every five years to assess changes in element condition as well as scour. However, the individual state should be allowed the flexibility to increase the inspection interval provided they have acceptable justification for doing so based, in part, on the previously mentioned influences.

What, if any, would be the impact on public authorities complying with evaluation of scour at bridges criteria within the NBIS regulation?

Guidance on recommended actions to be taken following major storm events is welcomed to ensure the safety of the traveling public. The definition of a major storm event could be problematic. Existing requirements for scour evaluation are sufficiently complex and conservative. Expanding upon these requirements will only make them more difficult to comply with and probably add little to their effectiveness.

Should the 4-year interval be increased so that more bridges would be eligible for the extended inspection cycle?

No.

What would be a reasonable interval? What impact would this have on the safety of bridges?

The existing inspection interval is sufficient to ensure the safety of the infrastructure, while not being overly restrictive or conservative. Regardless of the structure type, all bridges should be inspected at least once every four years.

Should the individual in charge of the inspection and reporting who is a P.E. be required to have the same training as bridge inspectors and have additional experience in bridge inspection?

Training, specific to bridge inspection, is valuable to engineers and non engineers alike and knowledge gained through past bridge inspection would be a benefit in the supervision

of the inspection and reporting of the NBIS. Both should be encouraged, but not required of a licensed professional engineer as his schooling, training as an EIT, and successful completion of the Professional Engineers Examination should compensate for these.

Should the NBIS regulations be more specific as to the discipline of the professional engineer responsible for these bridge inspections and what impact would this change have on public authorities complying with this?

The NBIS should not require a registered professional engineer to perform the on-site bridge inspections. The responsible individual should be defined as the individual who manages the inventory and inspection program.

The regulations should recommend, but not require, that a professional engineer responsible for bridge inspection be registered in either the civil or structural discipline of engineering. Engineering ethics obligate the individual to certify work only within his area of expertise.

What impact would this change (requiring certification training in proportion to the complexity of the bridge structure being inspected) have on public authorities complying with this as an NBIS requirement?

This change will not clarify "in a responsible capacity." All bridge inspection team leaders, who are not licensed professional engineers, should be required to attend the two week NHI Safety Inspection of In-Service Bridges or an equivalent training. This is more than adequate for the inspection of 95% of the structures in the country. Cable-stay, post-tensioned, suspension and segmental box girders certainly justify more training and inspection experience. Bridge inspectors, regardless of the complexity of the bridge should be allowed to gain experience from hands-on inspection under the supervision of an experienced inspector.

Should those performing underwater inspections be qualified as licensed professional engineers?

No. In general, bridge inspection is the assessment of the condition of the structure. With adequate training and proper supervision, bridge inspection can be accomplished by technicians and individuals that are not licensed professional engineers. This applies to underwater inspection as well.

What, if any, would the impact be on public authorities complying with only allowing the inspector who was out in the field to change the inspection report as an NBIS requirement?

The concept of disallowing anyone other than the actual inspector to change a bridge inspection report, in general, is sound. However, care should be exercised in how this requirement is implemented. First, it should only apply to those aspects of the report

requiring an inspector's judgement, i.e., assessment of scour, element condition rating, etc. It should not extend to items such as an incorrect milepost or road number, etc. Second, to expedite the process of revising an incorrect item, changes should be allowed by the professional engineer managing the bridge inventory and inspection program as long as the actual inspector has been informed of the change and is in agreement with the correction. If the actual inspector does not agree with the change, then it should not be made unless the item in question is reinspected by a qualified individual.

Should the reporting requirements for the NBIS be changed, and what, if any, would the impact be on public authorities complying with this?

No. The procedures presently in place are adequately written and function properly. However, the sufficiency rating formula should be revisited, and the Colorado conversion program should be updated. Element level inspections should be required, and English reporting should be allowed.

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5300 BISHOP BOULEVARD CHEYENNE, WYOMING 82009-3340

December 21, 2001

MEMORANDUM

TO: Federal Highway Administration

FROM: Wyoming Department of Transportation

SUBJECT: FHWA Docket Number FHWA-2001-9182

The Wyoming Department of Transportation offers the following responses and comments with respect to the advance notice of proposed rule making for the Bridge Replacement and Rehabilitation Program, FHWA Docket Number FHWA-2001-9182.

Is the current definition for major reconstruction adequate? If not, how should it be modified?

The existing definition for major reconstruction is adequate

In light of changes made to title 23 by the NHS Act, should the definition of what constitutes rehabilitation be expanded?

The definition of rehabilitation should be expanded to include work that protects the structural integrity of a bridge, extends the useful life of the structure, or is mandated worked.

The FHWA intends to make the HBRRP an effective program, which provides funds for upgrading the Nation's bridges to provide for increasingly safe structures for the traveling public. What flexibility should be provided in this program to reach this goal?

Allow the state more flexibility to choose replacement over rehabilitation. Basing this solely on the value of the sufficiency rating is not, in all cases, applicable or appropriate.

The standards that govern eligibility for rehabilitation and replacement are the AASHTO or the States' standards depending on the classification of the highway system. Should there be consistency nationwide on the appropriate standard(s) to be followed on all bridge that are insensitive to highway classification?

Eligibility for HBRRP funds is based, in part, on a structure being classified as structurally deficient or functionally obsolete. And, if the standards are to vary based on the roadway classification, they should be consistent nationwide. Having different eligibility criteria for an interstate as opposed to a major or minor collector may be overly burdensome.

Should the definition of major reconstruction project include some or all of these types of projects? Should these projects be eligible for HBRRP funds?

The following items should be considered to be added to the definition of major reconstruction and be eligible for HBRRP funding:

a. Work performed to keep the bridge operational while plans are being completed provided the structure is scheduled for major rehabilitation or replacement.
b. Work to stabilize and/or reinforce the existing bridge to accommodate construction traffic if required and if it is a cost effective alternative to construction of a detour.

HBRRP funds should be allowed for upgrading traffic railing and approach railing to meet the requirements outlined in NCHRP 350.

Should the process of using sufficiency ratings for establishing eligibility and priority be changed? If so, what method would be most effective in eliminating deficient bridges?

Yes. Sufficiency rating is not always a good measure of need. For example, slab bridges having an asphalt overlay in bad condition will result in a low deck and superstructure condition rating which can qualify the structure for replacement. Often, all that is required is a new overlay. Conversely, structures with fairly major deterioration (potholes in a voided slab superstructure) frequently have a high sufficiency rating and do not qualify for any HBRRP funding. Admittedly, some of these problems are a result of converting Pontis data to NBI ratings.

The sufficiency rating system, should continue to drive the selection of candidates for HBRRP funding, but the formula needs to be reevaluated to more accurately describe the overall condition of the bridge. Previous guidelines have established that a bridge can be rehabilitated when the sufficiency rating is 80 or less and replacement funds can be used when the sufficiency rating is less than 50. Often, this leads to a

substantial amount of confusion. Consideration should be given to removing the 50% threshold for replacement. Using a single sufficiency rating value would minimize the common confusion of eligibility and aid in the overall administration of the program. At the same time, this would allow each state the opportunity to determine how to apply the HBRRP funds for a particular bridge. This would also alleviate the problems commonly associated with a bridge qualifying for replacement after an inspection and not qualifying after the subsequent inspection or a change to the conversion program.

The FHWA is seeking comments on the use of apportionment factors based on bridge construction unit costs averaged over 3 years and on improving the accuracy of the cost data received.

Unit cost data for new construction submitted annually to the FHWA will sometimes not include the cost of factors such as location, aesthetics, requirements of other agencies, and environmental considerations, primarily because the submittals are limited to items specific to only the bridge. Associated costs that are not reported to the FHWA include mobilization, demolition of existing structures, approach slabs, stream channel work, riprap, detour costs, right-of-way, contingencies, and several other items. Depending upon requirements of a specific project, some of these costs can be fairly high.

Section 650.411 sets procedures for bridge replacement and rehabilitation projects for submission and approval. Should any of this be modified? If so, how?

No. The procedure for submission and approval of bridge replacement and rehabilitation projects is working well and should not be modified.